

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A femoral component for a total knee joint replacement comprising,

a ~~plurality of segments~~ first, second, and third segment, each of said first and second segments having a femoral fixation surface adapted to be positioned on a distal end of a femur, and each of said first, second, and third segments having at least one assembly surface adapted to be joined to an assembly surface of an adjacent one of said first, second, and third segments, said assembly surface being generally planar and arranged to be oriented generally in a plane extending in a proximal-distal direction and in an anterior-posterior direction when said femoral fixation surface is positioned on said distal end of said femur.

2. (Currently Amended) The femoral component for a total knee joint replacement of Claim 2 1, wherein ~~said segment~~ each of said first and second segments additionally comprises a bearing surface.

3. (Original) The femoral component for a total knee joint replacement of Claim 2, wherein at least two adjacent segments each comprise a bearing surface, said assembly surfaces of said segments being in mutual contact and said bearing surfaces of said adjacent segments being positioned to form a generally continuous bearing surface of said prosthesis.

4. (Original) The femoral component for a total knee joint replacement of Claim 3, wherein,

edges of said mutually contacting assembly surfaces are recessed below said generally continuous bearing surface of said prosthesis.

5. (Original) The femoral component for a total knee joint replacement of Claim 1, additionally comprising:

at least one fastener holding said assembly surfaces in mutual contact.

6. (Currently Amended) The femoral component for a total knee joint replacement of Claim 1, wherein said assembly surfaces are provided with self-alignment structures.

7. (Currently Amended) The femoral component of a total knee joint replacement of Claim 6, wherein said self-alignment structures are at least one projection on a first one of said assembly surfaces and at least one complementary depression on a second one of said assembly surfaces adapted to mate with said first one of said assembly surfaces.

8. (New) The femoral component for a total knee joint replacement of Claim 1, wherein the third segment extends only part way along a height of the femoral component.

9. (New) The femoral component for a total knee joint replacement of Claim 1, wherein the segments are each formed of one of titanium, cobalt-based alloy, alumina, and zirconia.

10. (New) The femoral component for a total knee joint replacement of Claim 2, wherein the assembly surface of each segment is oriented generally perpendicularly to the femoral fixation surface and the bearing surface the segment.

11. (New) The femoral component for a total knee joint replacement of Claim 4, wherein the assembly surface of each segment has a beveled corner.

12. (New) The femoral component for a total knee joint replacement of Claim 5, further comprising at least one bolt that connects the segments, wherein the assembly surfaces of the segments have holes through which the bolt can be passed to align and fasten the segments together.

13. (New) The femoral component for a total knee joint replacement of Claim 6, wherein the self-alignment structures secure the segments together.

14. (New) The femoral component for a total knee joint replacement of Claim 13, wherein the self-alignment structures include one of a dovetail joint and an interference fit joint.

15. (New) The femoral component for a total knee joint replacement of Claim 7, wherein the at least one projection includes a pin.

16. (New) The femoral component for a total knee joint replacement of Claim 15, wherein the pin is tapered.

17. (New) The femoral component for a total knee joint replacement of Claim 7, wherein the at least one projection has a v-shape configuration and the at least one complementary depression has a v-shape depressed configuration.

18. (New) The femoral component for a total knee joint replacement of Claim 1, wherein the assembly surfaces of the segments are positioned to minimize contact with one of an overlying patella and an overlying patellar component.

19. (New) The femoral component for a total knee joint replacement of Claim 1, including a condylar portion with a peak, wherein the assembly surfaces are positioned away from the peak.

20. (New) The femoral component for a total knee joint replacement of Claim 1, including two condylar portions with a groove between the condylar portions, wherein the assembly surfaces are positioned in the groove.

21. (New) A femoral component for a total knee joint replacement comprising, a plurality of segments, each of said segments having a femoral fixation surface adapted to be positioned on a distal end of a femur and at least one assembly surface adapted to be joined to an assembly surface of an adjacent one of said segments said assembly surface being generally planar and arranged to be oriented generally in a plane extending in a

proximal-distal direction and in an anterior-posterior direction when said femoral fixation surface is positioned on said distal end of said femur,

wherein at least two adjacent segments each comprise a bearing surface, said assembly surfaces of said segments being in mutual contact and said bearing surfaces of said adjacent segments being positioned to form a generally continuous bearing surface of said prosthesis,

wherein edges of said mutually contacting assembly surfaces are recessed below said generally continuous bearing surface of said prosthesis.

22. (New) The femoral component for a total knee joint replacement of Claim 21, wherein the assembly surface of each segment has a beveled corner.

23. (New) A method of implanting a femoral component for a total knee joint replacement on a distal end of a femur comprising the steps of:

providing a plurality of segments, each of said segments having a femoral fixation surface adapted to be positioned on a distal end of a femur and at least one assembly surface adapted to be joined to an assembly surface of an adjacent one of said segments; and

selecting segment sizes configured to position the assembly surfaces of the segments at a desired location when implanted on a distal end of a femur.

24. (New) The method of Claim 23, wherein for each of said segments said assembly surface is generally planar and arranged to be oriented generally in a plane extending in a proximal-distal direction and in an anterior-posterior direction when said femoral fixation surface is positioned on said distal end of said femur.

25. (New) The method of Claim 23, wherein the assembly surfaces of the segments are positioned to minimize contact with one of an overlying patella and an overlying patellar component.

26. (New) The method of Claim 23, wherein the femoral component has a condylar portion with a peak, and the assembly surfaces are positioned away from the peak.

27. (New) The method of Claim 23, wherein the femoral component has two condylar portions with a groove between the condylar portions, and the assembly surfaces are positioned in the groove.